

If an exponential equation models a real situation:

$$y = a \cdot b^x$$

Initial amount Growth or Decay Factor
of time periods
Don't round x
Represents the percent remaining after a given percent increase or decrease.

State the percent change each exponential equation represents.

1. $y = 450(0.704)^x$

$$\begin{array}{r} 0.704 \\ \times 100 \\ \hline 70.4\% \\ -100\% \\ \hline -29.6\% \\ 29.6\% \text{ decrease} \end{array}$$

2. $y = 0.97(1.0502)^x$

$$\begin{array}{r} 1.0502 \\ \times 100 \\ \hline 105.02\% \\ -100\% \\ \hline +5.02\% \\ 5.02\% \text{ increase} \end{array}$$

3. $y = 95(2)^x$

$$\begin{array}{r} 2 \times 100 = 200\% \\ -100\% \\ \hline +100\% \end{array}$$

100% increase

4. $y = 72\left(\frac{36}{25}\right)^x$

$$\begin{array}{r} \frac{36}{25} = 1.44 \times 100 = 144\% \\ -100\% \\ \hline +44\% \end{array}$$

44% increase

Does each represent growth or decay?

1. $y = 0.003\left(\underbrace{1.04}_{b>1}\right)^x$ Growth

2. $y = 44,000\left(\frac{223}{232}\right)^{-x}$
 $\hookrightarrow \left(\frac{223}{232}\right)^{-x} = \left(\underbrace{\frac{232}{223}}_{b>1}\right)^x$ Growth

You can now finish Hwk #1

Practice Sheet: Exponential Equations